

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A suction valve for a small hermetic compressor of the type presenting a compression cylinder, which has an end closed by a valve plate, said valve comprising:

a flexible vane comprising:

a fixation end portion to be affixed to the valve plate;

a bending median portion provided with a median opening aligned with a discharge orifice; and

a sealing end portion operatively associated with the suction orifice provided in the valve plate,

wherein the distance between an external edge of the flexible vane and its adjacent internal edge portion of the median opening diminishes, progressively, along a higher bending region of the flexible vane of the valve, from a maximum value, close to the end fixation portion, to a minimum value, close to the boundary of the higher bending region of the flexible vane,

wherein the flexible vane is configured to distribute opening forces along the higher bending region allowing the flexible vane to be bent along the higher bending region in an open position, and

wherein said flexible vane, presenting in its bending median portion and in its sealing end portion, a “U” shape with the legs being symmetrical about a longitudinal axis of the flexible vane, are of equal length and are united by the fixation end portion.

2. (Previously presented) A suction valve, according to claim 1, wherein the width of the median opening of the flexible vane increases, progressively, from a region adjacent to the fixation end portion to at least the opposite boundary of the higher bending region, whereas the total width of the flexible vane diminishes from the fixation end portion, at an initial portion, and then it begins to progressively increase towards the sealing end portion, from before the opposite boundary of the higher bending portion.

3. (Previously Presented) A suction valve, according to claim 2, wherein the median opening of the valve presents, along the higher bending region, a substantially semi-elliptical contour with its vertex being tangent with the fixation end portion.

4. (Previously Presented) A suction valve, according to claim 3, wherein the median opening of the flexible vane presents a substantially oval contour, with its axis coinciding with the axis of the valve.

5. (Previously Presented) A suction valve, according to claim 1, wherein the distance between the external edge and the internal edge diminishes more rapidly close to the fixation end portion than along the rest of the higher bending region.

6. (Previously Presented) A suction valve, according to claim 1, wherein the higher bending region extends from the region of the fixation end portion until about 50% the length of the flexible vane.

7. (Previously Presented) A suction valve, according to claim 1, wherein the width (L) of the higher bending region is determined by the equation $L/L_0 = ax^4 + bx^3 + cx^2 + dx + 1$, where L_0 is the maximum width; the coefficients a, b, c and d are defined according to rigidity and bending parameters of the flexible vane; and x is the ratio C/C_0 , where C is measured along the horizontal axis of the higher bending region measured from the boundary of the fixation end portion and C_0 is the length of the higher bending region.

8. (Previously Presented) A suction valve, according to claim 1 wherein the flexible vane is cut from a support blade, in order to have its external edge spaced from an adjacent cutting edge defined in said support blade by a gap wherein the gap is larger in its region adjacent to the fixation end portion of the flexible vane.